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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/550,319

04/14/2000

Patrice Onno

1807.1250

9092

5514

7590

03/29/2004

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EXAMINER

DO, ANH HONG

ART UNIT

PAPER NUMBER

2624

DATE MAILED: 03/29/2004

14

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/550,319

Applicant(s)

ONNO ET AL.

Examiner

ANH H DO

Art Unit

2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 1-13 and 15-17 is/are allowed.
- 6) ☒ Claim(s) 14 is/are rejected.
- 7) ☒ Claim(s) 18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

1. This is a supplemental Office Action to replace the previous one. Accordingly, the final Office action is vacated and the statutory period is reset to begin from the mailing date of this Office action.

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2/9/2004 has been entered.

Response to Arguments

3. Applicant's arguments filed 2/9/2004 have been fully considered but they are not persuasive.

The Applicants contend the cited prior art does not teach performing one-level forward wavelet transformation on each of the first blocks. However, Kajiwara clearly discloses performing one-level forward wavelet transformation on each of the first blocks to produce sub-frequency band blocks LL, LH, HL, and HH (Fig. 4B).

Regarding the specification, the applicants are suggested to arrange it as in the guidelines below (especially, it should include "Background of the Invention" and "Brief Summary of the Invention").

Specification

4. The following guidelines illustrate the preferred layout and content for patent applications. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

The following order or arrangement is preferred in framing the specification and, except for the reference to the drawings, each of the lettered items should appear in upper case, without underling or bold type, as section headings. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) Title of the Invention.
- (b) Cross-Reference to Related Applications.
- (c) Statement Regarding Federally Sponsored Research or Development.
- (d) Reference to a "Sequence Listing," a table, or a computer program listing appendix submitted on compact disc (see 37 CFR 1.52(e)(5)).
- (e) Background of the Invention.
 - 1. Field of the Invention.
 - 2. Description of the Related Art including information disclosed under 37 CFR 1.97 and 1.98.

- (f) Brief Summary of the Invention.
- (g) Brief Description of the Several Views of the Drawing(s).
- (h) Detailed Description of the Invention.
- (l) Claim or Claims (commencing on a separate sheet).
- (j) Abstract of the Disclosure (commencing on a separate sheet).
- (k) Drawings.
- (l) Sequence Listing, if on paper (see 37 CFR 1.821-1.825).

Claim Rejections - 35 U.S.C. § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kajiwara et al. (U.S. Patent No. 6,337,929 B1) in view of Bradley (WO 97/18527).

Regarding claim 14, Kajiwara discloses:

- means for dividing the image into a plurality of first blocks each consisting of (W pixels by H pixels) (Fig. 2: image WxH is divided into a plurality of first blocks WbxHb pixels);

- means for performing one-level forward wavelet transformation on each of the first blocks to produce sub-frequency band blocks LL, LH, HL, and HH (Fig. 4B);
- means for producing second blocks 0 - (N-1) having the same size as the first blocks shown in Fig. 4B, each consisting of sub-frequency band blocks LL (Fig. 10);
- means for performing wavelet transformation on the second blocks (Fig. 10: inverse discrete wavelet conversion).

One skilled in the art would have clearly recognized that Kajiwara divides an image into blocks and performs DWT on each block facilitate the image storage so as to improve encoding efficiency. Kajiwara does not specifically teach storing sub-frequency band blocks LL.

Bradley, in the same field of endeavor, teaches storing the resulting DWT coefficients implicitly including sub-frequency band blocks LL in a first primary memory (page 3, lines 19-20), wherein the method of Bradley using the memory for the seamless wavelet-based compression of very large contiguous images without artifacts so as to enhance the image encoding efficiency (page 2, lines 14-20).

Therefore, it would have been obvious to employ a memory in Kajiwara as taught by Bradley in order to store very large contiguous images in terms of DWT coefficients so as to enhance the image encoding efficiency.

Allowable Subject Matter

7. Claims 1-13 and 15-17 are allowed.

8. Claim 18 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter:

The present invention provides a new method, device, and computer product for performing discrete wavelet transformation on an image signal in which a memory occupancy level of processed data can be decreased (specification, page 1, lines 27-29).

Regarding claim 1, the prior art, either taken singly or in combination, does not teach:

- storing sub-frequency band blocks LL so as to produce second blocks having the same size as the first blocks and each consisting of sub-frequency band blocks LL obtained in the step of performing a one-level forward wavelet transformation from four of the first blocks (see independent claim 1).

Regarding claims 2-13 and 15-17, since these claims directly or indirectly depend upon claims 1, they are also allowable for the same reason.

Regarding claim 18, the prior art, either taken singly or in combination, does not teach:

- a number of memory circuits of the same size as the first blocks equal to the

number of required resolution levels, each of memory circuits being adapted to store sub-frequency band coefficients LL.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANH H DO whose telephone number is 703-308-6720. The examiner can normally be reached on 5/4-9.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, DAVID K MOORE can be reached on 703-308-7452. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

March 22, 2004.



ANH HONG DO
PRIMARY EXAMINER